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Child Development and Language Learning

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WE come to this conference today sharing the conviction that better communication among men is essential if some of the tensions of our times are to be relieved and if we are to achieve harmony in the world community of men. No longer can the world affairs of nations be left to their state departments and foreign offices. Foreign affairs are the affairs of every man, and every man must be prepared to discharge the responsibilities which have been delivered to him by events of the last two decades. It seems a reasonable assumption that democratic relationships among nations depend today less on diplomacy than on the intercommunication of common citizens—business man to business man, scientist to scientist, educator to educator. It seems clear also that we can no longer sustain the handicaps to understanding imposed by language barriers. Our problem is not whether Americans should be able to communicate in languages other than English, but rather what are the most effective means of developing skill in a second language.

Taking a cue from countries which have lived as close neighbors for many years, where the use of a second or a third language is a common expectation, we find our educational pattern at variance with theirs. We postpone instruction in languages; they start early. We ask ourselves, should we not also start language instruction in the elementary grades, and in our conference we seek some answers to this important question. I have been asked to talk about children of the elementary-school years, the years from six to 12 or 13, and to outline what help we can find for the solution of the problem of language instruction in current understandings of psychology and child development.

What is this child like, the child from six to 12? First, he is growing fast. Every month sees changes, not only in size and build, but in responsiveness and in purpose. He has moved out from a narrow and protected world of home and neighborhood to a world made up of many kinds of people. And of many ideas. He learns to read, and a vast storehouse of information is opened to him. He hears and sees things that mother and father never spoke of. He begins to define himself in broader terms than could

[1] Paper read at the Conference on the Role of Foreign Languages in American Schools, Washington 25, D. C.

be supplied by his family. He is eager to learn, if his eagerness has not been blunted by hurts to himself, and he is each year more capable of learning. His intellectual ability grows steadily, rising almost in a straight line from six to 12 and beginning thereafter to level off a bit. He is becoming a more social being. He wants to talk with other children and adults, to share things and ideas and feelings with them. He wants to test out his self, his growing independence. In favorable circumstances, he stakes out the whole world as his domain, and indeed, if TV, the comics, and the toys of Christmas are reliable indicators, he does not feel bound to our finite planet. His horizons are unlimited, and communication is his most exciting business. There seems to be no reason why he cannot collect and use and be proud of words and ideas in French and Spanish—as he collects and makes a part of himself coins and stamps and birdnests and batting averages. This is what the child from six to 12 looks like, in general. We need, however, to turn now to specifics, and to keep in mind as we do so that there is no such thing as a general child.

One thing we can say with absolute certainty about the child from six to 12, and certainties are so rare in psychology that I start with this one: between a child's sixth and 12th birthdays, he ages six years. What difference does age make for second-language learning? When is the optimum time to start the teaching of a second language? There is no simple answer to this question, of course, and objectives must determine the answer as much as data about the learning abilities of children. It is commonly said that a child can learn to speak a language more readily than an adult because his vocal mechanisms are more flexible, his speech habits less binding. This seems to be reasonable, though I have been unable to find experimental evidence showing that learning during this period of special facility has enduring value. I am willing to accept the observations of linguists on this point while hoping that we will soon have data showing quantitatively *how much* permanent advantage in language learning goes with youthfulness. The argument about language facility loses some of its force if effectiveness of communication is valued more than elegance of accent and expression. To "speak like a native" may be an agreeable but not a necessary objective of language study. French with a Georgia accent may be a bit strange but not ineffectual if communication is our goal. We have all known colleagues on university campuses who speak with strong German or French accents and make good sense when they talk, and making sense is doubtlessly our most fundamental objective in language instruction. Does early study of a language make later learning more efficient? Here the data are scant but encouraging. A psychologist, Burtt, read passages from *Oedipus Tyrannus,* in Greek, to his son between 15 and 36 months of age. At ages eight and 14 years, the boy, who never learned Greek, memorized passages from *Oedipus.* He learned more readily those passages that his father had read to him as an infant than he did the passages he heard for the first time. Here, surely, is permanence of effects of early learning which should offer consolation to those who despair when a child changing language environments seems so quickly to "forget" his first language. On the other hand, Agard and Dunkel have shown that learning a language by the aural-oral method does not increase efficiency in learning to read that language. Early teaching by the aural-oral method can be expected to increase facility only in that method. If reading is the goal, then reading should be taught, and at a later age after mastery of reading in the child's native language has been established. It has been asserted, in favor of teaching languages before 12, that children are more adept at rote memorization, such as would be involved in learning vocabulary, forms, and paradigms. Research has shown this not to be true. With intelligence held constant, and for subjects from seven and a half to 18 years of age, the ability to memorize both non-sense and meaningful material has been found to increase with age. It has been suggested that after age 14 children develop a psychic resistance to new languages—an interesting idea but one without any experimental support. On the other hand, Lorge has found that adults paid to learn Russian, some of whom said they hated Russian and had no interest in learning another language, learned more Russian in two months than the average undergraduate learns in a year.

Individual differences in rates of linguistic development among children during the elementary years are to be expected. Within each age group, a wide range of linguistic ability is commonly found. In one study, some of the children in kindergarten were linguistically more advanced than some of the fourth-grade children in the same school. Thus we must keep in mind that age trends are based on averages and that each child becomes an individual problem in language learning.

The data on the relationship of age to second-language learning suggest that the choice of age for beginning instruction should be determined by the objectives sought. There seems to be no one best age for all individuals and for all purposes.

What then of intelligence? The relationship between intellectual development and second-language learning is certainly central to our inquiry. Numerous studies report positive correlations between common measures of intelligence and the ability to learn for-

eign languages. The correlations are of about the same magnitude that one usually finds between an intelligence test and general academic achievement. In well-controlled studies with ample cases, coefficients of approximately .50 are usual. Though the data are more extensive for predicting achievement in traditional courses in which stress is placed on reading and composition, there are studies reporting similar correlations for aural comprehension, and at least one study reporting a positive relationship between intelligence test scores and French accent (r .48 and .59).

These correlations between intelligence and language learning indicate that the higher the mental age of the child, the greater facility he will have in mastering French, or Spanish, or German. For the average person, intellectual ability continues to increase throughout the elementary-school years. Developmental curves for most intellectual skills rise steadily until around the age of 13 or 14, at which point growth continues but with less rapid acceleration until about the age of 16 to 18 when there is a levelling off for a few years, followed by a gradual decline after the middle twenties. Fortunately for our interests, verbal skills, particularly those that are used regularly, are most resistant to decline throughout the life span. In general, these relationships between mental age and learning ability suggest the postponement of language study. However, the correlations are not perfect; indeed, intelligence accounts for only about 25 per cent of the factors that are involved in the ability to learn a second language. One investigator has shown that mentally retarded children can learn simple forms of communication in a foreign language and that they enjoy greatly the exercises involved in their instruction. Current practice is of interest here. In elementary schools in border regions where two languages are required, as in parts of Texas and Maine, an effort is made to teach every child a second language. However, in school systems where there is no immediate social pressure demanding two languages, the practice has often been to offer second-language instruction only to brighter students. Perhaps all children should have an early opportunity to learn another language with special encouragement given those most likely to be successful in their study. General intellectual ability would certainly have to be considered in selecting children for such special encouragement.

The question has been raised: does the study of a second language handicap a child in other areas of intellectual development? If the child learns French, does he learn less English? Is there a kind of balance that says a child can learn so much and no more, and that we must choose what the ingredients of his learning must be, diminishing one portion if we increase another? Here we turn to somewhat ambiguous data seeking a clear-cut answer. First, a case study may be helpful. You are probably familiar with Leopold's scholarly monograph describing the language development of his daughter, who was apparently a bright child. His study demonstrates that a child can become fluent in both English and German with no impairment in the development of either language. By the end of her second year, the child had an active vocabulary of 104 German words, 78 German-English words, and 195 English words, which gives her a total vocabulary of 377 words, approximately a hundred more words than the average child of two who learns English only. There is evidence that at the age of six Hildegard Rose Leopold was superior in both the languages spoken in her home.

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We do not know what effects her experiences with two languages had on her emotional development and social adjustment. Her father, a linguist, pointedly notes that his observations on psychology would be of as little value as have been the psychologist's observations on linguistics.

Studies of bilingual children offer some evidence on the effects of the acquisition of two languages on general intellectual development. In a sense, these studies provide a limiting case for us, since the children you teach will clearly suffer less impairment, if any exists, than do children who are bilingual in the usual sense. Investigations in Hawaii, Wales, and in Spanish- and French-speaking sections of the United States, indicate that bilingual children are markedly retarded on verbal tests of intellectual development. On nonverbal tests involving perceptual skills or motor performance, differences are not apparent or are slight. Bilingual children in those areas tend to be retarded in vocabulary development, to do less well on tests of achievement in school subjects, and to drop out of school more frequently than do other children. However, these findings are confounded by many influences not directly related to bilingualism, such as socio-economic status, membership in a minority group, and resentment of an imposed language. Where two languages are taught in the elementary years with both languages enjoying equal status and equal emphasis in teaching (as in the teaching of English and Afrikaans in South Africa), no impairment in either language seems to occur. Furthermore, in America the longer the bilingual child stays in school, the less the difference between him and other children.

The definitive work on the problem of bilingualism and intellectual development has been done by Arsenian. He studied 2,778 Italian and Jewish children in New York schools, whose home language was not English, and observed: "In the light of the results obtained in this research it is concluded that bilingualism does not influence—favorably or unfavorably—the mental development of children of age nine through 14 in the various groups studied in this investigation."

There is another hypothesis that appears tenable, though research evidence is lacking to support it. It may be that children of below average intelligence learn a foreign language at the expense of development in both languages; that average children come out even, gaining from the new language but losing a bit in their own; and that bright children gain not only another language but considerable enrichment in conceptual development that will find expression in both languages. In so far as intellectually superior children are concerned, instruction in another language offers a challenging experience, rich in rewards, of a kind too often lacking in curriculums that are tooled for mass production.

Let us turn now from intellectual to emotional factors in language learning. What of the child's emotional development during the elementary years? What of his interests and motivations? We have seen that intelligence accounts for approximately one fourth of the factors involved in language learning. This leaves three fourths of the factors unaccounted for. Differences in pitch discrimination, rhythm, visual and auditory preferences in learning, and motor skills may well make up a part of the remaining three fourths. However, it seems likely that the major portion of the factors unaccounted for by intelligence is motivation, the sustained eagerness with which the child approaches the language he is trying to learn. The spectacular success of some of the Army language programs was doubtlessly due to the strength of motivation brought to the learning situation. It is not uncommon to meet a person who dawdled through several years of language instruction in high school and college with indifferent success and then, faced with a Ph.D. language exam or a responsibility requiring communication in a second language, settled down to learn more in a few months than his previous years of minimum effort had yielded. In an effort to determine when second languages should be taught, we must assess the strength of motivation at different ages.

Most descriptions of programs of language study in the elementary grades report that children are eager to learn and that their interest, nurtured by good teaching, continues through the grades. For instance, Huebner, describing experiments with superior children in New York City who started the regular high-school course in French when they were in the seventh grade, reports that 31 out of the 35 children passed the Regents' examination after two years of study. Reports of the Cleveland program indicate that children completing Major Work Classes in elementary schools speak a second language with reasonable fluency, that they read with facility, and that they continue their early interest in languages. It should be kept in mind, however, that the studies reported in the literature are largely of special groups, either high in intelligence or experimental in nature. Bright children tend to get more satisfaction out of such intellectual activity than do average or dull children. And experimental groups are notoriously more productive than nonexperimental groups simply because they are special; the participants develop extra motivations, and those responsible for the experiment bring to their work extra enthusiasm and more careful planning and execution of their tasks. We must, therefore, project an answer to this question: what will children's motivation be like when French is just another subject to be studied, by all children, like spelling and arith-

metic? There can be little doubt but that some of the keen edge of enthusiasm will be worn off by the coming commonness of language instruction. But this should not discourage us. Children at six and eight and 12 are eager to learn, they are reaching out constantly, they are fascinated by new prospects. They do learn their spelling and their arithmetic as they will learn their French and Spanish. The challenge to the language teacher in the elementary grades is to keep his instruction vital and fresh and absorbing when he is no longer an innovator, a pioneer.

One of the problems that we face in America as we contemplate the introduction of language study in the elementary grades is how to infuse such study with compelling relevance for the child. It is one thing for us to agree that our world responsibilities require our citizens to be fluent in languages other than English, and another thing to make a child feel that such skills are as important as are skills in other activities that are supported by out-of-school events. Most American children will seldom have need of their second language in daily communication outside of school, as do children of some European countries. It is not inconceivable, however, that this motivational lack could be remedied in part by the development of out-of-school opportunities for communication in a second language. Perhaps there should be broadcasts, in simple French, of proceedings in the United Nations. Perhaps we should have some junior Fulbright fellowships. In thinking of language programs for the elementary years, it seems that we must concern ourselves not alone with what is taught in school but also with the larger motivational problem of language usage in our whole culture.

Emotions are closely related to motivation. It has been asserted, and there are occasional cases which may seem to support the contention, that the learning of a second language creates emotional difficulties for a child, that its effects may be harmful. I think we can dismiss concern for this allegation. Evidence is drawn largely from case studies of bilingual children where other factors such as a conflict between the cultural patterns of the home and of the community are central to the child's difficulties, and language only a minor part of the picture. Careful studies of college students with bilingual backgrounds show that they are no worse nor better adjusted than their fellows.

What do these observations on child development and language learning add up to? Unfortunately, no clear-cut answers emerge, as I am sure we wish they would. I conclude from the data that I have been able to find that there is no age which is exclusively the best age for the learning of a second language. Each age has its advantages, its limitations, and its special challenge to language teachers. The childhood years have an advantage in linguistic flexibility and in ease of learning directly the concepts of a second language; the late high-school and college years have an advantage in that they are the years of greatest general learning ability; the adult years have an advantage in that they often bring responsibilities making mastery of a second language imperative and bringing motivation to a point where the individual effectively mobilizes all his energies and abilities to learn the needed language.

Thus, the answer to the question of when second language instruction should be started and how long it should be continued depends on the objectives we establish for the learning of languages. If maximum efficiency is sought, that is, if we seek the greatest amount of learning in the least amount of time and if we are not concerned so much with elegance of expression as with effectiveness of communication, then language instruction should probably be given to adults when they strongly feel a need to use a second language. If the cultural values of language learning are considered paramount, with emphasis on the reading of the literature of another language, then the traditional pattern of teaching languages in secondary schools and colleges is indicated. However, if we believe that many of our citizens, perhaps, those who are most likely to assume leadership roles in our communities and in national and international affairs, should be fluent in a second language, or a third, able not only to communicate with ease but also to structure their thoughts in the language of the persons with whom they are conversing, and as much at home in the literature of their second language as in their own, then a new pattern for language instruction must be found for our schools. If we are right in our initial premise that better communication among men is essential to the preservation of the world community, then language learning in America should start in the elementary grades and be continued through the years of schooling and into the years of adult responsibility.

The Scientific Overlay

By MAX S. MARSHALL

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SCIENCE has been so thoroughly sold that much of the world is indoctrinated with the thought that science encompasses all that is rational. Science has a large share in our activities, but the prestige assigned to it has led to much pseudoscience. It has become respectable to belong to science and unrespectable to

deviate from it. This situation is unfortunately and unnecessarily false.

Science stands for a degree of the objective, for a touch of the material, for a soupçon or more of experiment, and for the most impeccable and unimpeachable logic. These components of science can be altered in various proportions, or there can be some additions or subtractions; but your definition and mine can both be satisfied without altering the points of the present discussion. The overlay of science is too great to be influenced by any peccadillo of definition. Science is science is science; make of it what you will, for we have work to do.

There are unequivocal scientists in mathematics, physics, and chemistry. They move stars during eclipses, turn out bombs with detonators on one end and social impact on the other, produce milady's gown and the ring she wears from a lump of coal, and combine these things in machines that sort cards or pick cotton. Not only do they fulfill any requirements of science but they support their reasoning by the unquestioned marvels of their products. Significantly, these unquestioned scientists show no concern as to whether or not they are called scientists. Ask one of them if he is a scientist or tell him that he is not one, and he is likely to look at you, a little puzzled, and change the subject.

Conversely, however, unequivocal designation of those in the arts as nonscientists is likely to stir up a few murmurs of resentment or protest no matter where we start. They are experts in language who busily count the words in tomes to see how frequently they occur, as they see it a scientific study. Some artists are fascinated by what they think of as the science of techniques; others seek a formula for art in geometry. These are indications of the intensity with which science has been pushed more than proofs that anything is seriously wrong, for not many solid scholars of Latin or genuine artists would pretend to be scientists.

However, suppose that a psychologist and a botanist are told that they are not scientists. The flat statement would arouse a natural resentment, of course, but the significance of the place attained by science, can be tested by telling these persons that they are not artists. That flat statement is not likely to arouse resentment, though it is equally fallacious. The fact is that "social sciences" carry a heavy responsibility, under whatever name; but they are not sciences. "Political science" as a mark of the significance of political organization, whatever its place on the campus or its relation to the basic subject, history, is a weighty matter; but it is not a science, unless we wish to stress unhappily the calculating, ruthless, soulless politician. Psychologists can be much disturbed at the thought that they are not in and of science, yet psychiatrists and other medical men, more secure in their fields, quite properly classify medicine with the arts rather than with science and do so without special pride or chagrin. The association of prestige and dignity with an affiliation with science is an easy association but not an inevitable one. The association is part of a gigantic sale of science, perhaps the crescendo of selling moves which started when science first had to find a place on campuses which were once supposed to be centers of a less material kind of learning and knowledge.

To belabor the pseudosciences or to slip out of the discussion by stipulated or coerced definition would lead to no progress. However, there is a potential gain in countering the unduly vigorous campaign for science by pointing out that pressure salesmanship has been invoked and that, this being true, pseudoscientists may have allied themselves too strongly with one side. That science and art are both respectable, dignified, and meaningful in the realm of knowledge or in the realm of practical living is a verifiable fact. Unfortunately we are what P. T. Barnum proved us to be, pushovers for a thorough job of selling.

Science begins with logical thought and becomes mathematics. Mathematics cannot be derived without problems involving things, thus leading to physics. Divide physics into one set of parts and chemistry is evolved; divide physics another way and engineering appears. We admire the logic, objectivity, and analyses of experts in these fields, so long as they stay in their own territory, and still more we like their plastics, oils, and automobiles. Men in these fields, liking their work and proud of it, have no objection to the label "scientists," especially when it carries a degree of hero worship with it, but they do not demand it nor worry about it. In fact, if they were more concerned they would take measures to prevent applications of the term to some who, obviously not scientists, thus belittle the dignity of science.

To be a scientist becomes a badge of distinction. Borderline scientists, never invited in, claim membership, wave their cards of membership often, and participate actively in the promotion of the scientific way as the good way. Cause and effect become confused; instead of science as a designation for those qualified it becomes an award to those who seek to get under the banner in order to appear qualified. Trouble becomes a sort of chain development. That is, a few peripheral men, perhaps engaged in a natural "science" or social "science," decide that they should be called scientists. They advertise science vigorously and declare their own virtues by self-established affiliation.

The technique for accomplishing this is old and familiar. It has been dodged already, specifically to keep open the paths of reasoned discourse. To become a scientist you (1) ask what *is* science, (2) pick on any items that you can claim, (3) emphasize these and stipulate that they are science, and (4) point out how you meet the qualifications. Try it. You can make a scientist of Paderewski with no trouble at all; but probably he was not only too genuine a man to have accepted the false honor under false pretenses, but also he would surely have questioned the honor itself.

There is a falseness here, lying in a common epistemologic confusion in which a cause becomes an effect. A medal is awarded a man for a great accomplishment. It may encourage him and give a good and worthy feeling to all who participate. If, however, the award is not a single event but is the first in a series, the second candidate will have felt that he *earned* the medal, and there will be a third candidate in the offing who will be *working* for the award and not for that which is rewarded, thereby seeking a reward for a merit he never possessed. In this way, science becomes an abortive reward, false in every part, except for those true scientists whose work is honest, whose interest in the classification as scientists is secondary and incidental.

Early naturalists caught butterflies (experimented), sorted them and applied Latin names (system; *cf.* any table of logarithms, a routine record which pseudoscientists, but not mathematicians, would call science), and counted them (quantification). Soon they sought false credits under the banner of science. To be sure, the thesis that natural science is science is entitled to its day in court. By the reasoned logic of science, perhaps, we have resistant corn and wheat of as much benefit as the tractors that plow for them. However, there is a noteworthy difference. In biology the variables are largely unknowns and are themselves variable. By striking a key here or there with a degree of reasoned logic, no more like mathematics than like Paderewski's striking of a key, a desired result can be produced. However, the zoologist and the botanist are not qualified scientists, at least through their primary occupations. In the remote ranges, such as "social sciences," we need not even consider the possibility of perimetric points of contact.

This should not matter, and would not, except for the fact that science has been so thoroughly oversold. The defensiveness with which the less scientific branches of knowledge meet any suggestion that they are not in and of science is due not to the fact that their motives, integrity, or intellects have been impugned, which they have not, but because they are told that they are on the "wrong" side of the tracks. These branches would be wiser to claim abilities to balance science, the spiritual, and art. This would put some scientists, for instance those who think they can write scientific formulae for life, where they belong, at the rear and not at the front in biologic problems. Balance and the whole truth are surely more significant than the truth of the test tube alone. The reason that the few real sciences are successful and seem easy to copy in impertinent fields is that within their framework the analyzable truths are whole truths. In $Force = mass \times acceleration$ there are also a thousand variables, but they are all relatively insignificant besides F, m, and a. But this is not true of biology.

Microbiology is at the threshold of biology and biology is not often questioned as to its place in learning and knowledge, but it is not a science. In the history of microbiology scorn is often expressed toward the theory of spontaneous generation: maggots appeared in uncovered meat, so they were spontaneously generated from the meat. How ridiculous! But today the presence of a vital spark in viruses and the absence of that spark in molecules of similar size and apparent complexity furnish a problem in spontaneous generation that reaches deeply into philosophy and intrigues historians and geologists. To say that the answer is not in a Frankensteinian formula might be improper, but to any chemist who says that the answer is in one of his formulae equal charges of impropriety and narrowness can be put. He, the more nearly complete scientist, is stepping into the arts, without essential acknowledgment of its principles, in such assumptions. When he assumes, as sometimes happens, that, as a more complete scientist, he is the man with the answers, he only reflects one of the dangers from the overselling of science. If I, as a biologist and a less complete scientist, make obeisance, regretting my scientific deficiencies more than other deficiencies, I do the same thing. My cue is to keep him within bounds, to keep science in its place, just as scientists should prevent pseudoscience.

That science has been made a false idol as the result of a campaign partly staged by scientists and partly built by pseudoscientists and advertisers who have attractive gadgets to sell is not hard to show. *The Reader's Digest* abstracts an article in which a pompous science "proves" that time seems to go faster when you are busy! Is it any wonder that any true scientist should question the company forced on him? Someone made a chart, ignored history and brains, and then claimed a special credit for brains because the presentation was in a form which unfortunately parades as science. Turn to advertisements and note that toothbrushes are convex, concave, tufted, straight, hard, and soft, every one backed by a subjective ra-

tionalization presented in the light of a cold simple logic that is unassailable because this is *science*. Try tonight's newspaper and here is an item which says that tens of thousands of dollars from endowed but public funds are to be spent in a tabulation of the obvious. That is, the money will buy endless forms and pay countless tabulators who work over the results of endless hours spent by unpaid victims to provide data for a Barnumesque performance? They arrive scientifically (?) at data about which (1) much less can be done when they get them than could be done directly, and (2) you could duplicate alone in two hours of considered thought with no pretense and an accuracy more than commensurate with the need, desire, and opportunity for action. The support given this elaborate pseudoscience will be falsely intensified by the erroneous label, "scientific." Science must be worshipped. It will lead to a distorted partial truth which, since it passes as a whole truth and is thus overvalued, will cause literal harm.

Specifically, this credence of science to which it is not entitled assigns a fictitious accuracy to the results. Chemists and physicists, legitimate scientists who do not worry about the label, teach their students early that it is improper to carry to an extreme degree of refinement one step in a series of operations in which other steps do not lend themselves to similar refinement. With a procedure which gives an answer accurate to plus or minus ten per cent a weight accurate to 0.01 per cent in the steps leading to this answer would be unwarranted. It might be recorded, but only the pseudoscientist would be fooled by the fictitious accuracy. Science is a major viewpoint in which an extreme refinement which looks so "scientific" adds nothing to a conclusion in which similar refinements are necessarily wanting.

This is the way pseudoscience becomes confused with legitimate science, to the potential detriment of both the contaminated science and the unscientific imitator. This is why statisticians, who can contribute much, so often lead to unfortunate social manipulation. A group on a campus which has no real reason for its existence, and most of us would agree that there are such groups though we might disagree as to which they are, has to call on false support to attain stature. The easy way to do this is to call in the statistician, give him a problem, and then use his numbers under the guise of science to show how wonderful this group is because it is scientific. These groups should, of course, be dissolved by putting the conscientious and able members in legitimate groups and dropping the others.

There are other pseudosciences, however, whose rights of existence no one would question. As an innocuous example, consider botany. Most persons like plants, and most botanists are well-meaning contributors to knowledge and man. There is no quarrel as to merit, but is botany a science? I say it is not. This is neither a compliment nor an indignity.

Science is not so full of glory that any man caught out of science is therefore of unsound mind. Those who are frankly of the arts have glorious times showing how silly science can be and often is. That botany might be either an art or a science is not the point. Botany is a field of study, and, like every legitimate unit of a campus, it should stand for complete and unadulterated truth. If this be found in science, so be it; but there is a saying that there is no expression of truth save through art. Taxonomic classification as science or as art is incidental to the truth itself. Try some studies of the respiration of plants, think of carbon dioxide as CO_2, and, within limits, you enter the realm of science. Weigh some of the problems of ecology or tackle the morphologic problem of branching and the great number of variables, many of them present only some of the time, becomes overwhelming. If, in the artistic study of interwoven factors the artist-botanist makes a count of branches, this does not take him into science or make of him a scientist. He should not think of himself as therefore scientific. The interplay of variables in many problems of botany and other biologic studies are better felt than resolved by formulae and tables, pseudoscientists to the contrary notwithstanding. The concept of the man or woman with green fingers as opposed to those for whom nothing grows is a realism from art, not from science.

The controversial nature of this point is evident. Botanists are accustomed to consider themselves as scientists and imputations to the contrary are disturbing. If science is greater than art, then he of the lesser half is impugned. No doubt charges that artists or ministers are scientists would be met with similar but reversed repercussions, yet so thoroughly is science oversold that even here there might be some feeling of compliment and a degree of acceptance. Some artists take dynamic symmetry seriously in somewhat the same way that some psychologists take personality studies; the minister, if he thinks alliance with science is a compliment, will not be unmindful of the relationships between archaeology and history or the influence of science of his principal problem, man.

This is the whole truth in this matter. There is no glory in science and no glory in art, save only in the heart of man. There is no reason to disparage or to acclaim science, nor any reason to discredit or admire art. Above both is the truth. The search for truth demands a square look at whole problems or their parts in relation to whole problems, without which they are nothing. The search for truth cannot afford the bias of restriction to science or art. It cannot afford to change its techniques of study to suit one

or the other. The camel's hair does not paint, but it can contribute to the picture by means of a manufacturer's discovery which came from an application of physics in the laboratory. An emotional urge does not lead to scientific discovery, but unless it is acknowledged and weighed in with the discovery science is falsified or nonexistent.

If this outlook can be realized for botany, microbiology, or any other pseudoscience, then it can become respectable to seek the truth without ignoring the slide rule but also without paying a premium for results made by slide rules. Science has been badly oversold, a crime against the state, when it leads to garbled truths and when to stand otherwise than four-square in the fold of science, becomes unrespectable. When results expressed in numbers are swallowed hook, bait, and sinker just because they are numbers, when tiny problems are dissected from whole problems and are reduced to formulae which lack all meaning relative to the whole, when fields of true science are bodily transposed to fields in which they do not belong and are allowed to reflect a false glow on truth, and when the intrinsic virtues of artistic interplay and the search for philosophic, even spiritual, truths are denied in favor of glamorous science, then we of libraries and laboratories are false to our trust. By their acts, pseudoscientists demonstrate that they are not of science; by their science, they limit their art.

By putting science in its place, several things of consequence can be accomplished. True science, as we have said, is not worried; it stands meritoriously on its own feet and cares not what we call it. The same is true, no doubt, of true art. Most of the world of knowledge as seen on campuses is divided into departments which lie between these frank extremes. By putting science in its place, we can eliminate those false subjects which have no right to survival but should be absorbed by the more basic departments of which they were once part. The many which remain would benefit greatly by throwing away the book, using available tools, and discarding restrictive affiliations with arts or sciences, that they may follow whichever approach best serves the truth. Otherwise we of campuses let science rule the roost. Worse than that, the one thing for which we stand, truth, is too often seriously warped by false techniques, false standards, false data, and the tremendous self-admiration that comes to the naïve buyer of an oversold science. Let the artists contribute more to science; and let science realize that, unless man can learn to live outside his own body, science will at best include both man and art. Let those purveyors of a common tool of science, the statisticians, serve only the semantic truth, a kind often not found in their figures, for they are responsible for many of the false conclusions that arise from their data and they have no social right to walk out on that responsibility. Let it be no great merit to be listed either with science or with art, that those who seek such truth as man can find be neither a stooge of science nor a god of science but what he is, however ordinary or extraordinary, a man.

REPORT

Does a Military Interruption Decrease the Chances of Obtaining a Degree?

By IRVING C. WHITTEMORE

Executive Secretary, Scientific Advisory Committees, Selective Service System

MANPOWER planning in a partial mobilization must draw a nice distinction between military requirements on the one hand and research, development, and production on the other.[1] One of the arguments advanced in support of a student deferment policy has been that when a program of training, as in a university, is interrupted to fulfill a military obligation, there is less chance that the individual will complete his education than if there were no such interruption.

In an effort to test the validity of this argument, data were sought concerning students who had entered military service during World War II from certain American universities. These students were later eligible to continue their training with Federal support under the so-called GI Bill. While the conditions applying to Korean veterans are somewhat different, it is hoped that an examination of the experience following World War II may offer evidence of the extent to which the interruption of training by military service tends to decrease the chances that such training will be brought to completion under present circumstances (*e.g.*, under a Korean GI Bill).

[1] There are others, *e.g.*, some persons can serve their country to better advantage and with no less risk in scientific than in military pursuits; the armed forces need some college-trained men, etc.

From the institutions with which each of four educational administrators serving the Scientific Advisory Committees of the Selective Service System are connected, a random sampling was obtained of 100 students who had left the university to enter military service during World War II.[2]

Table I is a tabulation of the number of these veterans continuing their education in the postwar period. It shows that, in so far as these 400 cases are representative, in a period when the Federal government supported veterans' education, over 70 per cent of the students whose programs were interrupted by a war either returned to the institution in which they had been enrolled or requested that transcripts of record be furnished for them to some other college or university. Over 54 per cent of them earned at least a first degree.

TABLE I

STUDENTS WHO LEFT COLLEGE FOR MILITARY SERVICE, WORLD WAR II

	Boston U.	Michigan	Indiana	Minnesota	Total	Per cent
Sample	*100*	*100*	*100*	*100*	*400*	*100*
Returned to College	75	65	65	56	261	65.2
Graduated by 1953 (at least one degree)	(71)	(50)	(56)	(40)	(217)	(54.3)
Transcripts furnished	8	15	4	No info.	27	6.8
Total who continued education*	83	80	60	56	288	72.0
Known dead	(5)	..	(4)	..	(9)	
Did not return or no information	(12)	(20)	(27)	(44)	(103)	(25.8)
Total who did not return	17	20	31	44	112	28.0
Per cent of those returning who graduated	94.7	77.0	86.2	71.4		83.1

* Except that some of those who were furnished transcripts may not have enrolled elsewhere.

To know that some 54 per cent of veterans return to attain their first degrees is of little significance in determining whether a military interruption decreases their chances of so doing unless one has comparable figures for nonveterans otherwise in similar circumstances. The figures are precisely the ones most difficult to secure, for little information is available.

Based on a 50 per cent sample (n = 1723), 29.9 per cent of the freshman classes of 1951 and 1952 at the University of Indiana had graduated by January 1, 1953. The University of Minnesota could not supply current information but cited a study published in 1938, (n = 2089). Matriculants of 1932 had graduated by 1936 to the extent of 27.9 per cent. Those of 1920 had graduated to the extent of 24.4 only.[3] The University of Wisconsin, not in the original four universities concerned, supplied a detailed "attrition" study for the class of 1948;[4] of those who entered as freshmen (n = 1344), 26.3 per cent graduated in 1948.

These sources of information suggest that a survival value from matriculation to graduation of somewhere between 25 and 30 per cent is probable in state universities. The figures include both sexes and veterans as well as nonveterans, except as noted.

In these "mortality" or "attrition" studies the figures are based on a follow-through of individual experience. A second type of information may be developed by using figures of the U. S. Office of Education for first-time college enrollments in a given year and first degrees four years later. The per cent which the second figure is of the first is in one sense a measure of attrition. It will differ from information obtained from a follow-through of individual cases to the extent that some of the first degree recipients may be transfers from classes which they entered more than four years previously. In a nationwide survey, transfers from one institution to another would not distort the findings. The U. S. Office of Education publishes figures on first-time college students for even-numbered years and on first degrees for odd-numbered years. In the tabulation below the "estimated first degree" column is an interpolation obtained by calculating the mean between the value for the previous and the following years.

TABLE II

FIRST-TIME COLLEGE ENROLLMENTS AND FIRST DEGREES FOUR YEARS LATER[5]

First-Time College Students		First Degrees		Estimated First Degrees (interpolated)		Survival Per Cent*
1931	336,997	1934	136,156	1935	139,641	41.4
1933	307,690	1936	143,125	1937	154,043	50.2
1935	366,734	1938	164,943	1939	175,722	47.9
1937	367,983	1940	186,500	1941	185,923	50.6
1939	417,539	1942	185,346	1943	155,605	37.3
1941	379,070	1944	125,863	1945	131,019	34.6
1943	314,311	1946	136,174	1947	203,597	64.7
		1948	271,019			
1931–1943	2,490,324			1935–1947	1,145,550	46.0

* Obtained by dividing the third column by the first.

The figures in the last column of this table suggest a student survival tendency for the colleges of the country as a whole which is considerably in excess of the values obtained from Indiana, Minnesota, and Wisconsin on the "follow-through" procedure. It is generally recognized that state-supported institutions usually adopt a more liberal policy with respect to

[2] Special thanks are due Dean R. E. Cleland of Indiana, Dean C. E. Odegaard of Michigan, Registrar R. L. Peel of Boston University, Vice-President M. M. Willey of Minnesota, and Dr. D. Wolfle of the Commission on Human Resources and Advanced Training.

[3] Pettengill, T. E., "Trends in Freshman Enrollment and Survival," *Journal of American Association of Collegiate Registrars*, XIII, (April, 1938), 327–334.

[4] Through "Student Personnel Statistics and Studies"; L. J. Lens, director.

[5] U. S. Office of Education, Biennial Surveys of Education.

admissions than the private colleges and consequently find it necessary to eliminate more students for academic failure. This difference in policy would make the attrition rate higher for the state universities and might account in part for academic survival values of the order of 25–30 per cent for Indiana, Minnesota, and Wisconsin, and of 40–45 per cent for the country as a whole.

Boston University, one of the original four included in this study, a private institution, has supplied figures for the entering freshman class at the College of Business Administration in September, 1947 and 1948, and the number graduating four years later. These figures are comparable to those in the tabulation above. The college admitted 1,227 in 1947 and 1948 and graduated 527 by June and 663 by August four years later. The survival values are 43.0 per cent after four academic years and 54.0 per cent after four years and a summer session. The figures tend to confirm the assertion that the attrition rate is less in private than in state-supported institutions, although a part of the difference may be due to the fact that it was a college of business administration in the private institution whereas the representation was broader in the state schools. Reference to the first table in this report shows that the College of Business Administration of Boston University experienced a comparably high survival rate for the veterans whose program of study was interrupted by World War II.

The Commission on Human Resources and Advanced Training reports that in 41 institutions the percentage of entering freshmen who graduate varies from about 15 to about 85 per cent, with a mean of 52.[6] This value covers both private and state-supported institutions and the study used the follow-through procedure. The mean here is considerably higher than that obtained from the somewhat different U. S. Office of Education figures, and almost twice the value for the three state universities. It is believed by the commission that this high value reflects a recent upturn in academic survival rates.

For purposes of comparison the series of survival percentages developed in the course of this study are grouped below.

TABLE III[7]

ACADEMIC SURVIVAL TO GRADUATION OF INTERRUPTED VETERANS VS. STUDENTS IN GENERAL

	Interrupted Veterans	Students in General
	Per cent	Per cent
Boston University (Bus. Admin.)	71	43.0 (4 Academic years) 54.0 (More than 4 academic yrs.)
University of Michigan (Arts)	50	
University of Indiana	56	29.9
University of Minnesota (Sci., Lit., & Arts)	40	27.9
University of Wisconsin		26.3
Average of 3 State Univs.	48.7	28.0
Average of 4 Univs.	54.3	34.5
Commission on Human Resources		52.0
U. S. Office of Education		46.0

In summary it may be said that the findings of this study indicate that, in a period of Federal support for veterans' education, the interruption of a college program to fulfill a military obligation does not seem to decrease the chance that the student will eventually attain his degree. There is some indication that it increases it.

[6] Report not yet published.

[7] If these figures are weighted in accordance with the best available but doubtful survival rates for the specific undergraduate levels at which the veterans left college, the value for the average of three state universities becomes 40.7; for Minnesota alone, 40.3.

EVENTS

The Bandwagon Completes the Circuit

THE era of "Progressive" education appears to be drawing to a close. It is doubtful whether it can be saved by giving it a new name such as "Modern" education. A survey of the attitudes of the teachers of Los Angeles on various aspects of education—administrative and curricular—quoted in *The New York Times*, June 14, reported as follows on the general problem:

> First is the general country-wide trend from the so-called "progressive education" that enjoyed such immense national popularity a few years ago, toward what is called "practical education" that emphasizes the three R's and eliminates the frills.

At about the same time there was published a report on "Elementary School Objectives," prepared by Nolan C. Kearney for the Mid-Century Committee on Outcomes in Elementary Education and issued by the Russell Sage Foundation of New York. The thesis of the survey is contained in a remark that "elementary education, like a bride's trousseau, should have something old and something new." It would not be

unfair to cite the following passage as the central finding of the survey:

> The outcomes of elementary education here recommended emphasize mastery of the essentials, the three R's, from the standpoint of their use in the modern world. They emphasize as well the competence involved in behavior that is moral, socially acceptable, and effective to the child as an individual and as part of a group. They emphasize intelligent behavior, mental health in behavior, behavior that is democratic.

This is a statement that will commend itself to all who have been critical of that extremism in educational theory which has replaced sound thinking in education for three decades or more. What this statement means is that a well prepared teacher can be relied upon to use whatever content and methods of instruction are most appropriate in a given situation, for teachers, to quote the survey, "are eager to do the best job possible and to use procedures that are practical and effective." "Progressives" may object to this, but the true essentialist, who would reject the definition of essentialism presented in the survey, would find that the bandwagon has at last returned to the position that he continued to maintain.—I. L. K.

PRIVATE SCHOOL STUDENTS RECEIVE FINANCIAL AID

ONE in seven students in independent schools is the recipient of financial aid to make a private school education possible. More than $3,600,000 is spent in this manner by 229 schools, according to a survey by the National Council of Independent Schools. The 229 schools submitting statistics represent less than a third of the affiliated membership of the council.

The percentage of students holding such scholarships in the schools surveyed is 14.2, and they number 8,468 boys and girls in schools with a total enrollment of 63,428. The financial aid represents 7.6 per cent of the schools' budgets.

An analysis of the figures of those schools reporting shows that the largest number of pupils so helped are the 2,158 in boys' day schools, while 1,969 are aided in coeducational day schools, 1,636 in boys' boarding schools, and 1,581 in girls' day schools. The boys' boarding schools make the largest outlay, a total of $1,230,716, while boys' and coeducational day schools each expend $674,000 in financial aid.

By opening their doors to students of exceptional ability who could not be enrolled without scholarship help, the independent schools have greatly broadened their service opportunities in the field of private education through more diversified student bodies.

THE UNIVERSITY OF MINNESOTA AND THE FBI CO-OPERATE ON POLICE TRAINING

A NEW chapter in Minnesota law enforcement was opened recently when the University of Minnesota and the Federal Bureau of Investigation joined forces to establish a co-operative police training program with the purpose of raising the professional status and competence of the state's peace officers.

Under the new program, police schools sponsored by the FBI in cities throughout the state will have university recognition. A committee of university staff members has revised the course material offered in these schools to conform to university standards. Six special agents of the FBI who teach in the police school program will be appointed instructors on the university faculty. They are: W. G. Banister, special agent in charge of the Minneapolis office; C. B. Howard, assistant to Mr. Banister; Samuel W. Hardy; Roy O. Stuart; Walt M. Sirene; and Karl Zeimes.

Police officers enrolled in the program will now be able to earn university certificates in any one of seven different fields of criminology after completing 45 hours of prescribed course work. Credit received for these courses, however, will not count toward a university degree.

To supplement the schools held throughout the state, the university, from time to time, will conduct on the campus special short courses in particular subjects related to criminology.

Notes *and* News

Appointments, Elections, Resignations, Retirements

Earl J. McGrath, whose resignation as commissioner of education, Department of Health, Education, and Welfare, was reported in SCHOOL AND SOCIETY, May 2, has been appointed president, the University of Kansas City, effective August 31.

Clarence B. Hilberry, whose assumption of duties as acting president, Wayne University (Detroit), was noted in these columns, June 28, 1952, has been named president of the university.

The Reverend Andrew A. Seebold, S.M., president, Cathedral Latin School (Cleveland, Ohio), has been

named president, University of Dayton (Ohio), to succeed the Reverend George J. Renneker, S.M.

Robert J. Cox, pastor, the Free Methodist Church, Medford, (Ore.), has succeeded Llewellyn Davis, who recently resigned as president, Los Angeles Pacific College.

George Little Follansbee, chairman of the department of biology and master, Phillips Academy (Andover, Mass.), has been named headmaster of Shady Side Academy (Pittsburgh, Pa.), effective September 1.

Carey Croneis, president, Beloit (Wis.) College, has been named provost, the Rice Institute (Houston, Tex.), effective in January, 1954.

B. L. Dodds, director of the division of education and applied psychology, Purdue University (Lafayette, Ind.), has been appointed dean, College of Education, University of Illinois, effective November 1.

Sister Mary Susanne Smith, S.S.M., assistant professor of nursing education, Saint Louis University, has been appointed dean, School of Nursing, to succeed Sister Mary Geraldine Kulleck, S.S.M., who has been named superior of the university's Firmin Desloge Hospital.

Gordon Goodhart, associate dean, School of Medicine, University of Southern California (Los Angeles), has been named dean of the school, succeeding Burrell O. Raulston.

Elizabeth Kerr Porter, head of the advanced professional program, Frances Payne Bolton School of Nursing, Western Reserve University (Cleveland 6, Ohio), has been appointed dean of the school, effective August 1. Dr. Porter will succeed Helen L. Bunge, whose assumption of duties as executive officer of the new Institute for Research in Nursing, Teachers College, Columbia University, was reported in these columns, February 14.

Seth Winfield Russell, assistant dean, School of Liberal Arts, Pennsylvania State College, has been appointed dean of applied arts and sciences, North Dakota Agricultural College (Fargo), to succeed G. Ernst Giesecke, effective in September.

Harry L. Bowman, head of the department of civil engineering, Drexel Institute of Technology (Philadelphia 4, Pa.), has been named dean of the faculty and dean, College of Engineering, to succeed Robert C. Disque, who will retire August 31.

Paul M. Herzog, formerly chairman of the National Labor Relations Board since 1945, has been named associate dean, the Graduate School of Public Administration, Harvard University.

Maurice E. Stapley, associate professor of education, Indiana University, has been appointed assistant dean, School of Education, to succeed Raleigh W. Holmstedt, who was recently elected to the presidency of Indiana State Teachers College (Terre Haute).

Robert S. Michaelsen, assistant professor of religion, Yale University, will succeed M. Willard Lampe as director, the Iowa School of Religion, State University of Iowa, effective December 1.

William G. Fletcher, whose assumption of duties as assistant to the dean, School of Arts and Sciences, University of Delaware, was noted in SCHOOL AND SOCIETY, December 1, 1951, has been appointed director of admissions to succeed Charles W. Bush, who retired June 30. Dr. Fletcher has also been advanced to professorship of ancient languages. Others who were promoted included: to professorship, Ardwin J. Dolio (education); to associate professorships, Raphael R. Ronkin (biological sciences), Russell Remage, Jr. (mathematics), and Frank H. Sommer (sociology); and to assistant professorships, Elizabeth Crook (music), Florence Reiff and June Patterson (home economics) and Milo Lude (physical education).

Wallace Gobetz, acting director, the Testing and Advisement Center, New York University, has been appointed director of the center. Ray F. Harvey, professor of government and head of the department, the Graduate School of Arts and Sciences, has been appointed director of the new office of the budget. Christian O. Arndt, professor of education, is on orders from the U. S. Department of State to perform the duties of U. S. education specialist in Germany, India, Burma, and Formosa, effective August 15. Benjamin H. Lyndon, associate professor of social work, Wayne University (Detroit, Mich.), has been named professor of social service and educational director of the new social work training program, the Graduate School of Public Administration and Social Service, New York University.

Richard H. Logsdon, whose advancement to associate directorship of the libraries, Columbia University, was noted in SCHOOL AND SOCIETY, January 1, 1949, has been appointed director of the libraries.

Karl G. Kaffenberger, senior supervisor of vocational rehabilitation, New York State Education Department, has been appointed director of the department's Division of Vocational Rehabilitation, succeeding the late G. Samuel Bohlin.

In addition to her appointment as professor of education, Bowling Green (Ohio) State University, Dorothy McCuskey has been named director of curriculum, Bowling Green City Board of Education.

Dr. McCuskey's former appointment as associate professor of education, the University of North Carolina, was reported in SCHOOL AND SOCIETY, October 25, 1947.

Peter S. Hansen, chairman of the department of music, Stephens College (Columbia, Mo.), has succeeded Leon R. Maxwell as director of the Newcomb College School of Music, Tulane University (New Orleans 18). Professor Maxwell and Anna Many, dean, Newcomb College, have both retired. Faculty members of the university who have been advanced in rank included: to associate professorships, Gaither A. McConnell (education), Edward G. Ballard (philosophy), and Dick Taylor (English); and to assistant professorships, Leonard Reissman (sociology), Charles P. Roland (history), and Kenneth Vines (political science).

T. Noel Stern, associate professor of government, Boston University, has been named director of the Fondation des Etats-Unis of the Cité Universitaire, the University of Paris.

Howard O. Brogan, professor of English, Syracuse (N. Y.) University, has been named director of the honors program in English, Bowling Green (Ohio) State University, effective in September. Others appointed to the English faculty include: Richard C. Carpenter, assistant professor, and Arnold B. Fox and Edgar F. Daniels, both instructors.

Burton W. Gorman, formerly principal, Emmerich Manual Training High School, Indianapolis (Ind.), has been appointed professor of education and head of the department, DePauw University (Greencastle, Ind.), succeeding Earl C. Bowman, who retired as professor emeritus of education after 25 years' service to the university.

William Rhea Morgan, assistant professor of speech, Brooklyn College, has been appointed chairman of the department, Carthage (Ill.) College.

Stephen C. Gribble, director of the summer school, Washington University (St. Louis 5), has been appointed acting chairman of the department of education, succeeding Frank L. Wright.

Peter A. Bertocci, professor of philosophy, Boston University, has been named Borden Parker Bowne Professor of Philosophy.

William L. Reuter and Roger M. Shaw have been advanced to professorships of education, Kent (Ohio) State University.

The University of Michigan has announced the following faculty appointments and promotions: professor, Olin L. Browder, Jr. (law, academic year 1953–54); visiting professor, Robert B. MacLeod (psychology, first semester of academic year 1953–54); associate professors (academic year 1953–54), Joaquin M. Luttinger (physics) and Gordon E. Peterson (speech); and assistant professors (academic year 1953–54), Roger C. Lyndon (mathematics) and George Makdisi (Near Eastern studies). Faculty members who have been granted leaves of absence for the academic year 1953–54 include: Herbert G. Barrows, Jr., and Austin Warren (English) who have received respectively a Fulbright Award for study in Italy and an appointment to the Berg Professorship, New York University. Among those granted emeritus rank were: William Warner Sleator, associate professor of physics; Edward Simpson Everett, assistant professor of English; and Eugene Stock McCartney, editor of scholarly publications.

Emery Stoops, administrative assistant to the superintendent of schools, Los Angeles County (Calif.), has been appointed associate professor of education, School of Education, University of Southern California (Los Angeles 7), to succeed Irving Melbo, who will assume the duties of dean, School of Education, this fall.

Recent Deaths

Thomas Franklin Kane, former president, the University of North Dakota, died recently at the age of ninety years. Dr. Kane had served as professor of Latin and Greek and vice-president (1888–90) and acting president (1890–1900), Lewis College (Lockport, Ill.); professor of Latin (1895–1900), principal, preparatory department (1897–1900), and president (1916–18), Olivet (Mich.) College; professor of Latin and Greek (1900–02), and president (1902–14), the University of Washington (Seattle); and president (1918–33), the University of North Dakota.

John Gordon Stipe, vice-president, Emory University (Ga.), died, June 8, at the age of sixty-seven years, according to a report received by SCHOOL AND SOCIETY, July 20. Dr. Stipe had served the university as teacher of languages (1911–14), assistant professor of Romance languages (1914–19), registrar (1919–39), director of admissions (1939), acting dean (1924, 1927, 1938, and 1948), the College of Arts and Sciences, acting dean (1948–51), the Graduate School, dean of faculties (1948–51), and vice-president (since 1951).

Arthur Fletcher Lucas, professor of economics and director, division of business administration, Clark University (Worcester, Mass.), died, July 7, at the age of fifty-six years. Dr. Lucas had served as instructor in economics (1920–22, 1924–26), Princeton University; assistant professor and professor (since 1926) and director (since 1946), Clark University.

Lemuel Arthur Pittenger, president emeritus, Ball State Teachers College (Muncie, Ind.), died, July 12,

at the age of seventy-nine years. Mr. Pittenger had served as teacher (1893–95, 1896–97), Indiana district schools; teacher of English (1900–06), Muncie (Ind.) High School; critic teacher (1908–13), Indiana University; professor of English and head of the department (1913–19), Ohio State Normal College; professor of rural education (1922–27), and president (1927–43), Ball State Teachers College.

Richard von Mises, Gordon McKay Professor Emeritus of Aerodynamics and Applied Mathematics, Harvard University, died, July 14, at the age of seventy years. Dr. von Mises, who was born in Austria and came to this country in 1939, had served as professor of applied mathematics (1920–33), University of Berlin; professor of mathematics (1933–39), University of Istanbul (Turkey); and professor of mathematics (since 1939) and Gordon McKay Professor (since 1944), Harvard University.

Erwin Brand, associate professor of biochemistry, College of Physicians and Surgeons, Columbia University, died, July 12, at the age of sixty-two years. Dr. Brand, who was born in Berlin, Germany, had served as research associate chemist (1929–37), New York State Psychiatric Institute; and associate professor of biochemistry (since 1931), Columbia University.

RECENT *Publications*

"Accreditation Policies of Institutions of Higher Education for the Evaluation of Educational Experiences of Military Personnel." *Bulletin No. 9.* Pp. ix + 73. American Council on Education, 1785 Massachusetts Avenue, NW, Washington 6, D. C. 1953.
Published by the Commission on Accreditation of Service Experiences.

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ADAMS, BESS PORTER. *About Books and Children: Historical Survey of Children's Literature.* Pp. xvi + 573. Illustrated. Henry Holt and Company, New York 17. 1953. $4.50.
Good literature for children is not something separate and far removed from the great body of literature enjoyed by adult readers. It must bear the mark of truth, integrity, and carry the reader along into genuine experience.

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BEAN, KENNETH L. *Construction of Educational and Personnel Tests.* Pp. viii + 231. McGraw-Hill Book Company, New York 36. 1953. $4.50.
The material in this book is helpful not only in the development of written tests of knowledge and various abilities, but also in performance tests of skill.

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BLÄTTNER, FRITZ. *Geschichte der Pädagogik.* Pp. 250. Verlag Quelle & Meyer, Zeppellinstrasse 200, Heidelberg, Germany. 1953. Marks 13.50.

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COLLINS, WILKIE. *The Woman in White, and The Moonstone.* Pp. vi + 229. Illustrated. Globe Book Company, New York 10. 1953. $2.40.
Adapted by Verda Evans.

CRANE, STEPHEN. *The Red Badge of Courage: A School Edition.* Pp. v + 196. Illustrated. Globe Book Company, New York 10. 1953. $1.84.
Adapted by Frederick Houk Law.

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